

**INCIDENT**

<b>Aircraft Type and Registration:</b>	Airbus A321-231, G-MIDJ	
<b>No &amp; type of Engines:</b>	2 International Aero Engines V2533-A5 turbofan engines	
<b>Year of Manufacture:</b>	1999	
<b>Date &amp; Time (UTC):</b>	12 July 2006 at 1400 hrs	
<b>Location:</b>	Descent towards London (Heathrow) Airport	
<b>Type of Flight:</b>	Public Transport	
<b>Persons on Board:</b>	Crew - 5	Passengers - 125
<b>Injuries:</b>	Crew - None	Passengers - None
<b>Nature of Damage:</b>	None	
<b>Commander's Licence:</b>	Airline Transport Pilot's Licence	
<b>Commander's Age:</b>	41 years	
<b>Commander's Flying Experience:</b>	10,370 hours (of which 4,694 were on type) Last 90 days - 172 hours Last 28 days - 60 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot and company investigation report	

**Summary**

Due to air leaks associated with both air conditioning packs, the packs stopped operating and the cabin altitude rose above 10,000 ft. Crew and passenger masks were used and a normal landing was accomplished at London (Heathrow) Airport.

**History of the flight**

During the turn round at Glasgow Airport after a flight from London (Heathrow) Airport, the crew and ground engineer noted unusual noises coming from the APU. After discussing the situation, the commander selected the APU off and used an external air source to start the engines. The subsequent takeoff and climb for the return flight were uneventful.

Shortly after commencing descent from FL310 in preparation for the approach to Heathrow, the 'APU BLEED LEAK' caution illuminated followed closely by the 'ENG 1 BLEED LEAK' caution<sup>1</sup>. With the Electronic Centralised Aircraft Monitoring (ECAM) actions completed, the commander advised ATC that the aircraft had a pressurisation problem and was continuing the cleared descent to FL200. He also advised the Senior Cabin Attendant (SCA) of the situation and warned her of the possibility of a rapid descent.

**Footnote**

<sup>1</sup> These cautions indicate that the leak detection loops have detected a temperature of greater than 124°C in the case of the APU bleed leak and 204°C (with the appropriate engine running) for the engine bleed leak.

The co-pilot continued as the handling pilot while the commander reviewed the information in the Quick Reference Handbook (QRH) and the ECAM. He noted that both air conditioning packs were indicating off and that the cabin altitude was indicating a vertical speed increase of approximately 1,000 ft/min. Both pilots donned their oxygen masks as the cabin altitude reached an indicated 10,000 ft. The 'CAB PR EXCESS CAB ALT' warning illuminated and the co-pilot declared a 'PAN' while the commander commenced the ECAM actions. With the cabin altitude continuing to climb, the commander deployed the passenger oxygen masks.

By then, ATC had cleared the aircraft to descend to FL100 and the pilots completed the relevant ECAM actions. After a further descent to FL80, the pilots reviewed the situation and removed their oxygen masks. The commander then briefed the SCA that it was now safe for the passengers to remove their oxygen masks and that he planned to carry out a gentle descent towards Heathrow. The flight crew agreed that the co-pilot, who was very experienced on type, would continue as handling pilot for a normal approach and landing and would maintain a descent of about 700 ft/min. ATC provided appropriate radar vectors commensurate with the desired descent rate and a normal landing was achieved on Runway 27 Left. Once clear of the runway, the aircraft was stopped and communication was established with the AFRS on frequency 121.6 MHz. With no indication of any other problem, the aircraft was cleared to taxi to a stand where the passengers disembarked normally.

Throughout the incident, the commander and SCA made regular PA announcements to the passengers updating them on the situation.

### **Company actions**

After the incident, checks were carried out on the aircraft pressurisation system. The aircraft had been experiencing bleed problems for some time prior to the incident. The problems were first reported on 28 June 2006 but since then, the reported problems had been intermittent and inconsistent. Each event had been investigated and had resulted in either no fault being found or in components being replaced.

Following the incident on 12 July, air leaks were found associated with both air conditioning packs. During the ground checks, other defects were noted that may have contributed to the incident; these defects were rectified by the replacement of No 2 engine bleed, its shut-off valves and the engine transducer. Additionally, the appropriate seals on both engines were replaced and satisfactory leak checks were completed. Thereafter, engine ground runs were carried out to confirm the proper functioning of the pressurisation system. The defect on the APU was investigated and attributed to a fault with an oil pressure switch which was replaced.

Following the release of the aircraft back to service, it was monitored closely for one month with no recurrence of any pressurisation problem.